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ABSTRACT

In spring 1986, the Community College of Philadelphia (CCP) participated in a study conducted by the Center for the Study of Community Colleges to test students' knowledge of the liberal arts. The General Academic Assessment (GAA), a 94-item test of student knowledge in the humanities, social sciences, mathematics, and English usage, was administered in 35 representative course sections to 645 students. Study findings included the following: (1) while students who had earned more than 60 credit hours at CCP outperformed students who earned fewer credits, the overall differences between new students and graduates were slight; (2) the GAA scores of students who had earned 45 to 59 credit hours were dramatically lower than the scores of all other students, regardless of course content area or credit hours earned; (3) student scores on the GAA math scale came the closest to displaying the type of steady upward trend that is consistent with a value-added perspective; and (4) regardless of subject content area, students entered and exited CCP with lower GAA scores than students at other colleges where the test had been administered. Possible explanations are put forth for the overall low GAA scores of CCP students and the higher scores of new students compared to continuing students. (UCM)

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INSTITUTIONAL *In Brief* RESEARCH

COMMUNITY COLLEGE OF PHILADELPHIA

CCP

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IN-BRIEF #38
July 27, 1987

GENERAL ACADEMIC ASSESSMENT

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INSTITUTIONAL *In Brief* RESEARCH
COMMUNITY COLLEGE OF PHILADELPHIA
CCP

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GENERAL ACADEMIC ASSESSMENT

During the Spring, 1986 semester, CCP was provided with an opportunity to measure student knowledge in general education using a test instrument from a multi-community college study conducted a year earlier by the Center for the Study of Community Colleges. The purpose of the Center's study was to obtain an assessment of community college student knowledge in general education and the liberal arts. It was anticipated that the test results could serve a dual purpose for community college educators, both as an aid to informed decision making about curricular modifications and as an estimate of institutional outcomes.

CCP's use of the instrument used in the General Academic Assessment (GAA) Study seemed appropriate given the high level of College interest in general education issues. The GAA, which was designed specifically for community college use, contains 94 multiple choice items to test student knowledge in the Humanities, Sciences, Social Sciences, Mathematics, and English usage. Test items were selected so that a student's general knowledge could be assessed regardless of where or when that knowledge was gained.

In addition to providing institutional measures of student knowledge across a variety of subjects, another advantage derived from participation in the GAA was the availability of community college base line figures that would make inter-institutional comparisons possible. Base line figures contained herein consist of composite scores gathered in the following urban community college districts: Los Angeles Community College, Miami-Dade Community College, St. Louis Community College, and City Colleges of Chicago.

Standardized sampling procedures were established by the Center and implemented by personnel at the participating community colleges. The class section was used as the unit of sampling, with several exclusionary criteria. Only sections with academic transfer-credits were eligible, thereby excluding remedial, vocational-technical, adult education, or Community Services courses.

At CCP, students in 35 course sections listed on the Spring, 1986 Master Schedule participated in the study. There was a representative sample across departments and disciplines.

CCP figures are based on responses from 645 Spring, 1986 students. 'Other College' figures are based on 8026 Spring, 1985 students from the four participating community college districts.

Responses to test items were tallied to a total score and to individual subtests in Humanities, Social Sciences, Literacy, Math and Science. Scores were standardized across subtests, taking on a range of values from 0 to 10. The Total Liberal Arts Scale is the sum across subtests, thereby taking on a range of 0 to 50.

CCP test results across content areas are contained in Figure 1, and the Total Liberal Arts Scale is contained in Figure 2. Student scores are disaggregated into five cumulative credit hour categories in both these graphs. The Humanities trend line is the most distinctive of the five, set well below the remaining four lines, thereby indicating it is the weakest area of CCP student performance. The Social Science and Literacy Scale scores, which represented the areas of highest achievement for Freshmen (0 -14 and 15 - 29 credit groups) CCP students, clustered together as did the Math and Science scores for these two credit groupings.

An analysis of average scores over categories of students by credit hours completed yields some interesting and troublesome trends. While students in the 60+ category outperformed students in each preceding classification, the overall differences between new CCP students (0 - 14 credits) and graduates (60+ credits) are slight. The largest difference between these two extreme credit hour groups is in Math and Humanities areas, with the smallest difference in the Science area.

Another consistent trend across content areas and credit hour categories is the dramatic drop in scores associated with the 45 to 59 credit hour group. In the case of Literacy and Social Science, this drop is preceded by drops in each of the prior credit hour categories as well.

The Humanities and Science trend lines follow similar patterns with increases (larger for Humanities subscale) in the 15 to 29 credit hour groups and declines over the next two credit categories.

The Math scale comes closest to displaying the type of steady upward (with the exception of 45 to 59 group) trend that is consistent with a value-added perspective.

Several explanations can be posited for the incongruence between the information contained in Figures 1 and 2, and the expectation that each succeeding category of credit hour achievement should be characterized by growth in these content areas. The most plausible of these explanations will be briefly discussed.

Given the quasi-experimental orientation imposed on the study design, it is possible that the sample of participating students was biased and therefore not generalizable to non-tested CCP students. Perhaps we were unlucky in drawing students from the 45 to 59 credit hour group and happened to get an uncharacteristic group of poor achievers. If so, the same weakness in sampling procedures would have to be raised concerning the student groupings that include 15 to 44 credit hours, since several scale scores regressed over these categories as well.

In order to test out this possibility, several pieces of demographic and student goal-related information were used as the basis for comparing Spring, 1986 tested and non-tested students in each of the credit hour clusters. These analyses did not reveal significant differences that would indicate an obvious negative bias in the sample data. In fact, given the timing of the data collection (end of Spring semester), a convincing argument could be made that abler students were more likely to be included in the sample, since it is likely that many marginal students would have dropped from the sampled courses by that point in the semester.

If the samples are accepted as reasonable representations of the CCP student body, then several possibilities exist for the interpretation of results.

It is possible that in recent semesters, CCP has attracted students who are better prepared in the areas measured by the test. Given the enrollment patterns that characterize many CCP students (part-time status and stopping-out), it is likely that students in the larger credit hour categories initially enrolled years ago and are quite different from recent entering students in terms of their general education knowledge. If entering-student levels could be held constant, it is possible that more intuitively appealing trend lines would have resulted.

The apparent trends are also interpretable within the context of student flow. It is possible that better students leave CCP after shorter periods of enrollment than do students who are less well-prepared. Previous institutional research studies undertaken by CCP and Temple University lend credibility to this possibility. These studies indicate that CCP students transfer to four-year schools after earning an average of 45 CCP credit hours, and that students transferring with fewer than 45 CCP credits were more likely to pass Temple's writing placement test than students transferring with 45 or more credits.

The least palatable explanation, but nonetheless one which can not be ruled out, is that CCP students do regress in terms of the skills measured by the test. Perhaps curricular structures at CCP force students into focused, narrow skills areas and do not provide the types of experiences that augment and reinforce student development in general education areas.

Comparisons of CCP with 'Other Colleges' are contained in Figures 3 through 7. Several consistent dissimilarities between the trend lines associated with the different college samples are immediately apparent. For example, regardless of content area, CCP students enter with lower skills and exit with lower skills than the other tested community college students. If progress can be measured by the difference of exiting scores (60+ credits) and entering scores (0 -14 credits), than CCP students progress is modest compared to their peers at other colleges.

As with CCP students, the weakest content area for 'Other College' students is Humanities. It is also the area of greatest student similarity at entry. Science was the area of greatest difference between CCP students and 'Other College' students over all credit hour groupings.

The progress associated with students at other community colleges increases steadily across credit hour categories in most content areas. Unlike the regression in test scores displayed by the CCP trend lines, these results are intuitively appealing since they are consistent with a value-added notion of education.

The possibility of a biased CCP sample was entertained in a previous paragraph as a possible explanation for CCP's poor showing. The same issues concerning a biased sample can be raised about the 'Other College' sample. Even though the institutions that make up this category are large, urban community colleges, their student body may differ considerably from CCP's and may account for student differences across test scores. In order to explore this possibility, demographic comparisons between categories of participating students were made and revealed the following differences. CCP students were slightly older and more likely to be Black and less likely to be Hispanic, Asian or White (listed in order of the magnitude of the difference). A second set of analyses were undertaken, controlling for these demographic differences through statistical means and thereby making the two groups more comparable with regard to their initial differences. These adjustments failed to change the structure of the trend lines contained in Figures 3 through 8.

Imposing statistical comparability of the two groups based on a limited number of demographic variables can not insure that other differences between the two groups have been eliminated. Other important differences would not have been statistically controlled. Perhaps CCP students possess inferior test-taking skills compared to their peers, or perhaps the test-taking conditions at CCP were not as conducive to high scoring as those at the other tested colleges.

Another competing explanation for the differences displayed in Figures 3 through 8 is that the test questions do not accurately reflect the educational goals of general education

at CCP. While this possibility can not be unequivocally ruled out, it seems to be unlikely given the history of the tests' construction. The General Academic Assessment Survey was designed specifically for use in community colleges. Items for the content portion were drawn from several sources, including the National Assessment of Educational Progress and Educational Testing Service, with the final selection of items that were included on the tests being made by panels of staff members from a variety of community colleges. Copies of the test for content analyses are available for review.

Given these weaknesses in experimental design, the results of the GAA need to be reviewed cautiously. Nevertheless, the most conservative approach to interpretation of the results indicates that 645 (7.4%) of the Spring, 1986 subgroup of eligible CCP students tested at low levels on all the general education scales and had inferior test scores compared to a sample of students at other community colleges.

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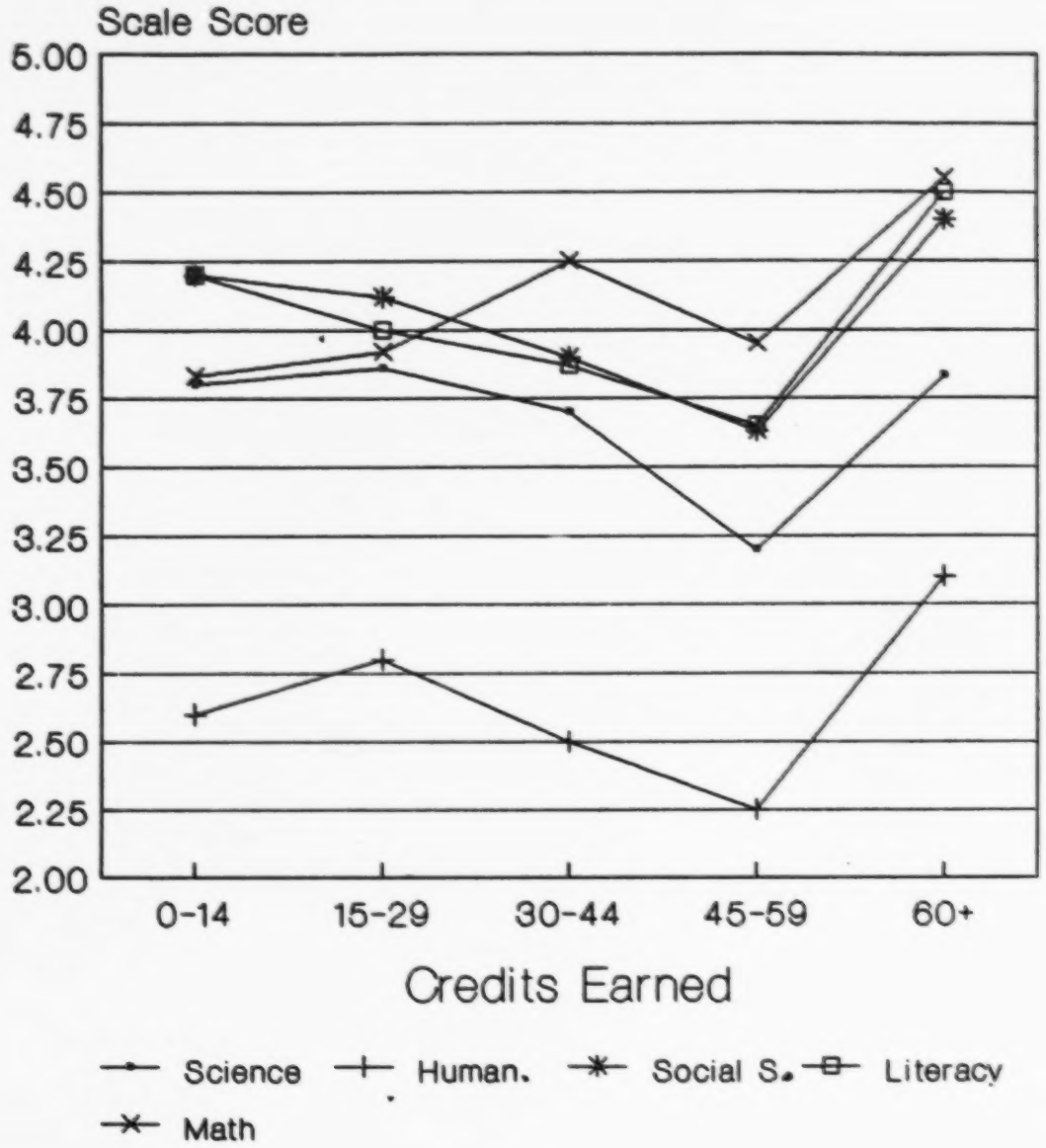
Attachment

FIGURE 1

CCP GAA SCORES
by CREDITS EARNED



Spring 1986

FIGURE 2

TOTAL GAA SCORE
CCP STUDENTS

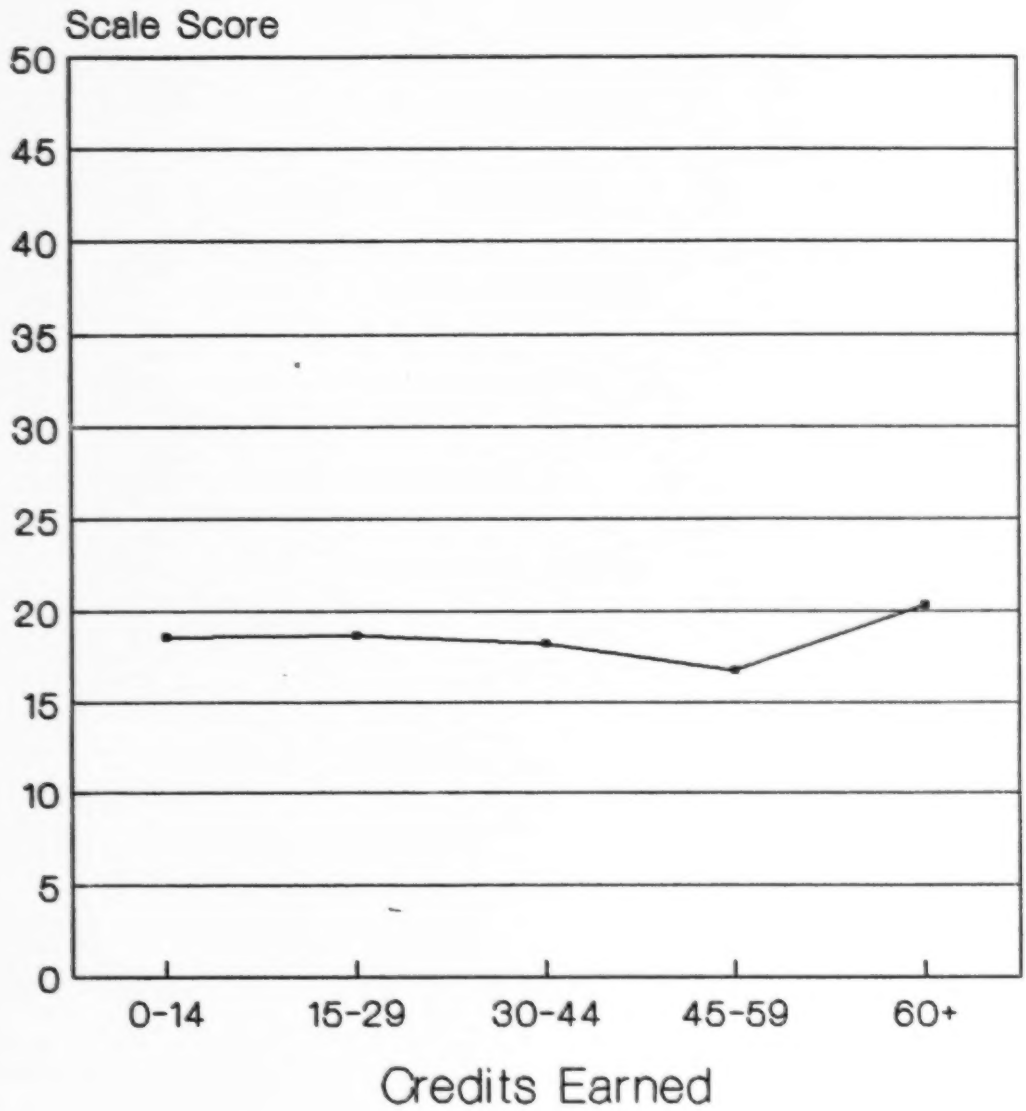


FIGURE 3

Science Scale Score
Interinstitutional Comparison

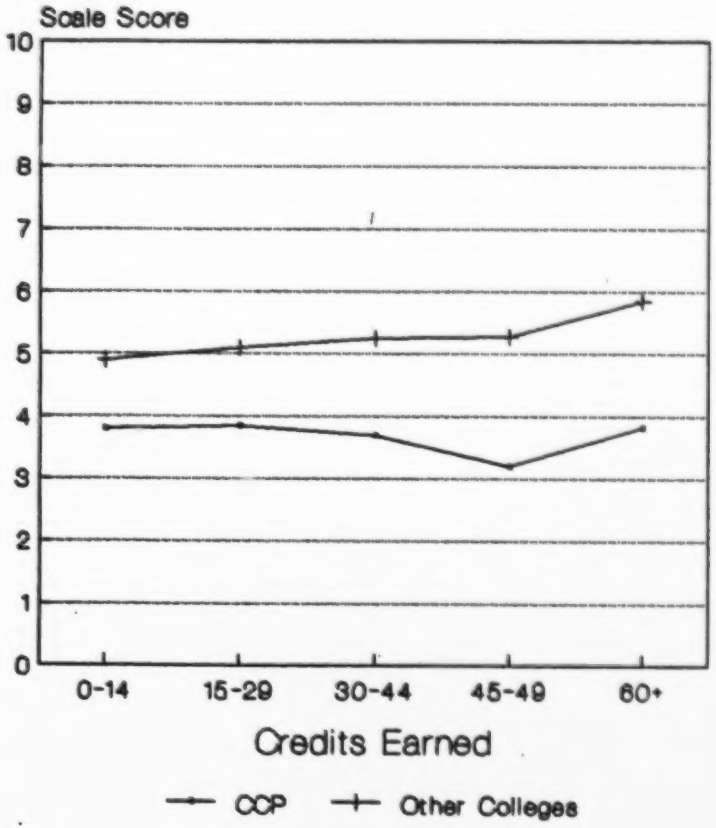


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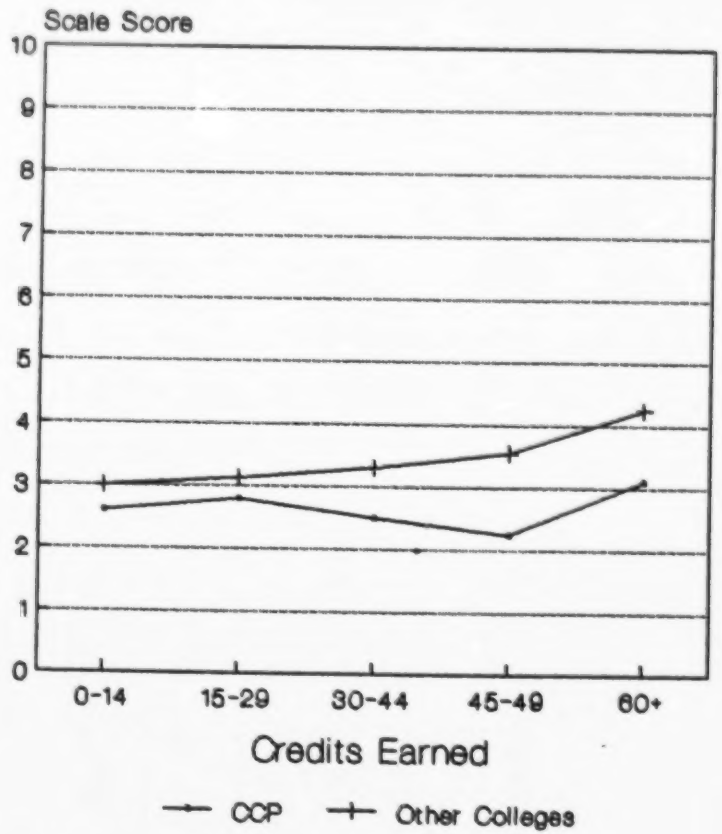
FIGURE 4

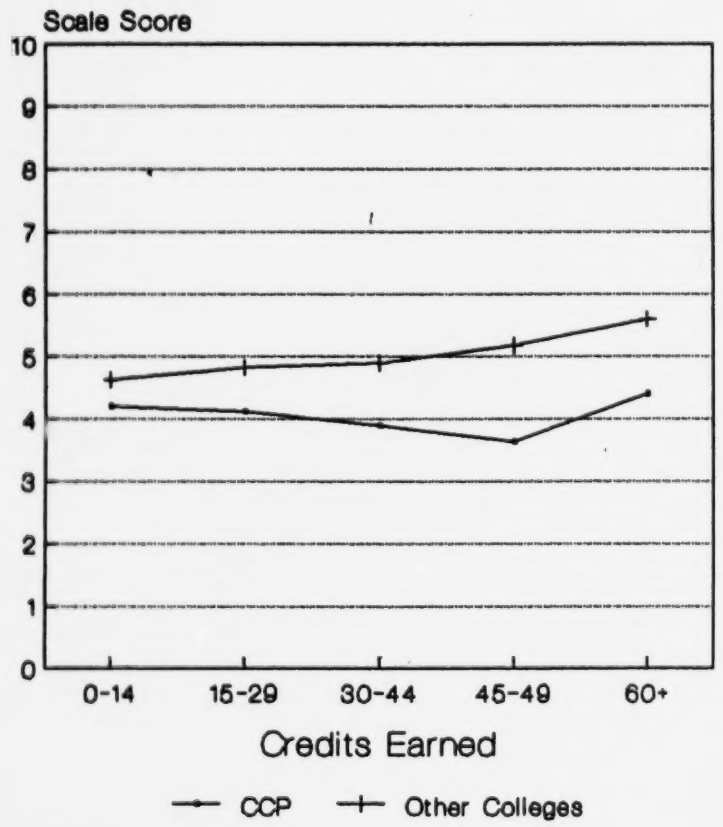
Humanities Scale Score
Interinstitutional Comparison



Spring 1988

FIGURE 5

Social Science Score
Interinstitutional Comparison



Spring 1986

FIGURE 6

Literacy Scale Score
Interinstitutional Comparison

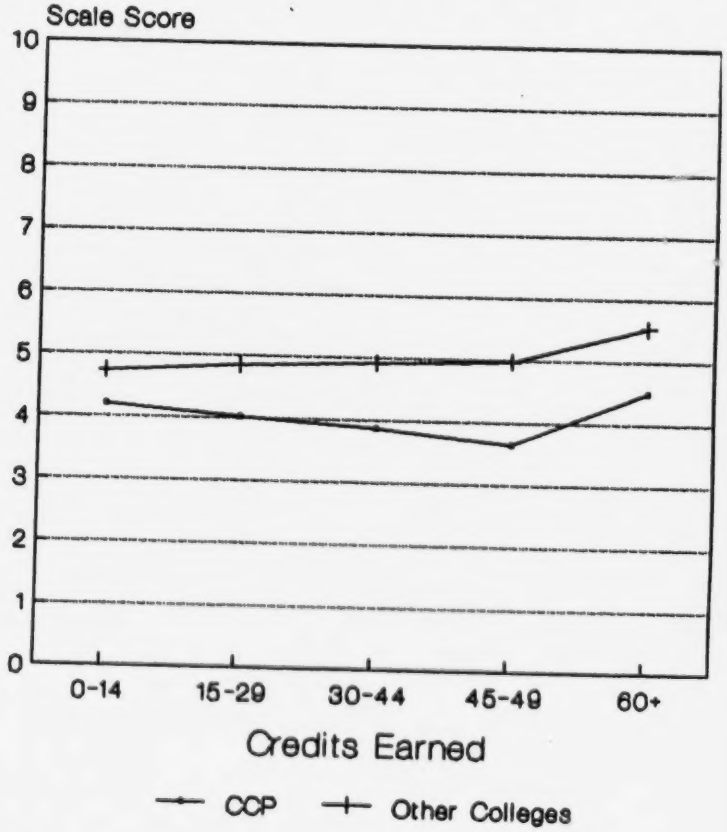


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FIGURE 7

Math Scale Scores
Interinstitutional Comparison

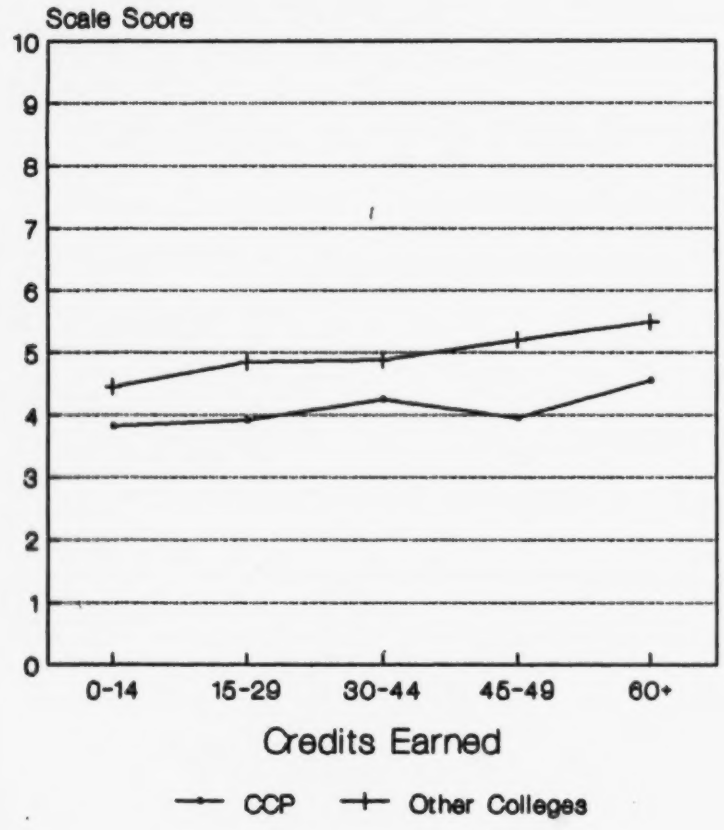

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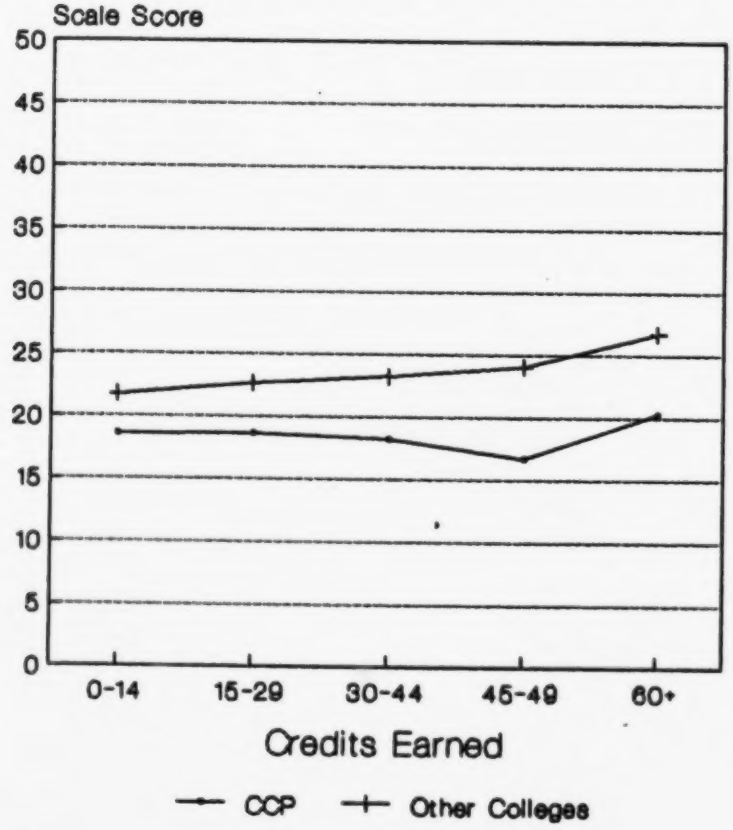
FIGURE 8

Total GAA Score
Interinstitutional Comparison



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